

Culture-Centered Design: Culture Audit of Screen Designs for Educational Software in Saudi Arabia

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Abstract. This paper describes screen design issues in a culture audit performed on software prior to translation. The authors found that this effort was cost-effective, because, for relatively little money and time, one can identify problematic items that translation services may not uncover, avoiding the end result of translating well what should never have been localized in the first place. In the cultural analysis section, we provide an overview of the wider cultural and social context of the rapid educational reform currently underway in the target country, Saudi Arabia. Because most educated users in the target country have learned to use the Microsoft Office Suite, we recommend that the design of Office be used as a baseline reference for any redesign.

Keywords: audit, business, culture, design, development, software, icons, management, Saudi Arabia, user experience, user interface.

1 Introduction

The authors worked with Client X (anonymity requested), a major software translation and localization firm. Their own client (Client Y) was in the process of converting educational software that serves more than 100,000 schools and universities throughout the United States and 165 countries worldwide. In 2009 Client X partnered with AM+A to provide a culture-oriented evaluation of the software's usability, usefulness, and appeal for the Saudi Arabian market (with eventual adaptation for the Gulf and Levantine regions), focusing on the visual design and use of icons and imagery. For this project, AM+A conducted a culture audit, examining icons, graphics, concepts, and terminology. In addition, a small sample of Saudi students studying in North America was recruited to review parts of the interface and to discuss customization.

2 Cultural Analysis

2.1 Educational Change

In considering the user-interface requirements for an Arab version of the library management application, it is important to understand the influence of the central

government on the adoption of software and the training of academics to use new educational technologies.

Saudi Arabia is engaged in a major spending program to combat the global recession and maintain its economy. Much of this spending (\$32.6B, or 25% of the total) is aimed at education and training. More than 1500 new schools are scheduled to be built and more than 2000 renovated [1]. New private colleges and the two new elite universities have introduced educational reforms. King Abdullah has emphasized the need for the Kingdom to embrace higher education, for women as well as men, to diversify its economy, reduce dependence on oil exports, and employ its graduates.

The *General Project for Curriculum Development*, adopted in 2002 by the Ministry of Education, laid the groundwork for the increased use of educational technologies. However, a recent study describes barriers that prevent full use of technology in the schools (M. Al-Abdulkareem, 2008, as cited in [2]):

- Weakness of infrastructure, especially communication infrastructure
- Need for technology specialists
- Lack of technological knowledge and skills among teachers and administrators
- English language barriers (for example, most Web 2.0 tools are in English)
- High cost of technology

The Computer and Information Center in the Ministry of Education has the mission of overcoming these problems and managing the development of educational technology and infrastructure. However, not all schools are computerized and not all schools are connected. The Ministry Website notes that there are 2,300 computer labs (39,100 PCs) in elementary and intermediate schools, 3,000 (51,000 PCs) in secondary schools, and 2,000 Learning Resource Centers (12,000 PCs) [3]. However, there are more than 28,000 schools throughout the country [4].

Boys and girls are educated separately and it is not clear whether education for girls is at the same level of technological adoption. A separate department within the Ministry, the General Presidency of Girl's Education, handles requirements for girls' education. Although King Abdullah promotes female education and expanded career options, religious conservatives continue to restrict opportunities, and many women academics complain that the system is unequal [5]. As a result, a number of private schools exist alongside the public school system, and many (like Dar Al-Fikr Private School in Jeddah) have been sources of curricular and technological innovation [2].

The Ministry's latest ten-year plan (2005) seeks an integrated solution for the application of information and communication technologies by 2014 [6]. In addition there are plans to train 30,000 teachers.

2.2 Cultural Values

Hofstede's 1997 study of cultural values characterized Arab cultures as having high power distance (respect for authority), medium collectivism, and medium masculinity [7]. However, these ratings need to be put in context. Hofstede did his research in the 1970s-1980s; he sampled employees of a Western corporation (IBM); and he

amalgamated the statistics from a number of Arab countries (Egypt, Iraq, Kuwait, Lebanon, Libya, and the United Arab Emirates, as well as Saudi Arabia). As he himself admits, “impressionistically, the Saudis within this region are even more collectivist than some other Arabs like Lebanese or Egyptians” (p. 54). Studies of Saudi Arabia itself describe the country as having extremely high power distance, strong collectivism, and strong masculinity.

These cultural values influence the educational system. Power distance is expressed in a number of ways. Not only is government education centralized, it is standardized and based on religious teachings. Schools follow a curriculum that focuses on instilling Islamic values. Elementary students take nine hours per week of Islamic studies from first to sixth grades; intermediate students take eight hours per week from seventh to ninth grades [8].

Concern with moral values legitimates censorship and public surveillance. Women aren't allowed to buy CDs and DVDs in shops; Internet cafes are required by law to install surveillance cameras; and *Arab News* reported the Saudi Communication and Information Technology Commission asked Research in Motion to allow it to monitor BlackBerry Messenger service or be shut down. [9] Government censors the Internet through its Internet Services Unit; new laws authorize five-year jail sentences for people distributing “pornography or other materials that violate public law, religious values, and social standards of the kingdom” [10]. Saudi Arabia is considered one of the least open countries on the Internet.

Similarly, Saudi Arabia has extremely strong collectivism; national and religious goals are promoted over individual goals in the school systems. Even though King Abdullah's educational reforms are intended to upgrade standards and open new professional opportunities to men and to women, his program is couched in nationalistic and religious terms. The concept of the *ummah*, the community of believers, is central to Islam and used to justify the kingdom's social conservatism.

Lastly, Saudi Arabia practices strict gender segregation and, until recently, restricted women to non-technical jobs. Girls are now being encouraged to consider new occupations, *e.g.*, software engineering and architecture, but all professions remain segregated. For example, only women teach women. If women professors are not available, men lecture women students using video technology and have no other contact with them. Children are educated separately, but girls are not required to cover until they become teenagers.

3 Visual Analysis

3.1 Examples of Websites Considered Sophisticated and Attractive

The students were asked to nominate websites that demonstrated good design. These examples of Saudi Websites were considered particularly sophisticated and attractive.

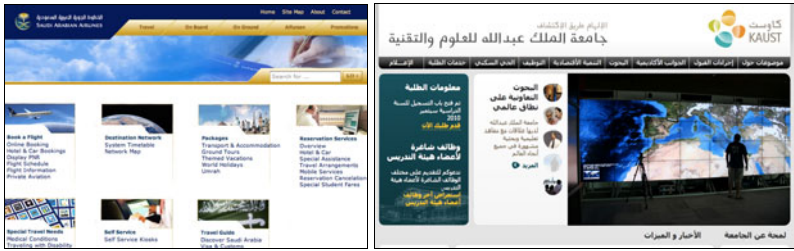


Fig.1. Saudi Arabian Airlines, left, King Saud University, right Photographic images are also used as buttons on both websites

3.2 Examples of Websites Popular with Young Saudis

While not a universal preference, Saudi young people tended to prefer sites with a simplified appearance overall and a limited number of colors, as shown in the accompanying figures.

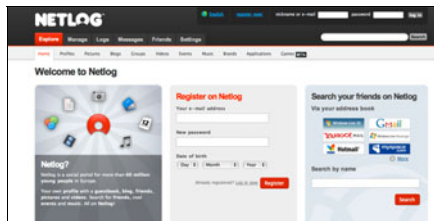


Fig.2. NETLOG is a European equivalent of Facebook that has a wide selection of languages, including Arabic. <http://en.netlog.com/>



Fig.3. kammelna.com offers card games. Hih2 has sports news

3.3 Colors Used on Library Sites of Saudi Colleges and Universities

Most Websites for Saudi educational institutions use blue, green and gray palettes. The color green is associated with Islam, but is acceptable for use on secular Websites. (See www.findouter.com/MiddleEast/Saudi_Arabia/Education for more education-related websites.,)

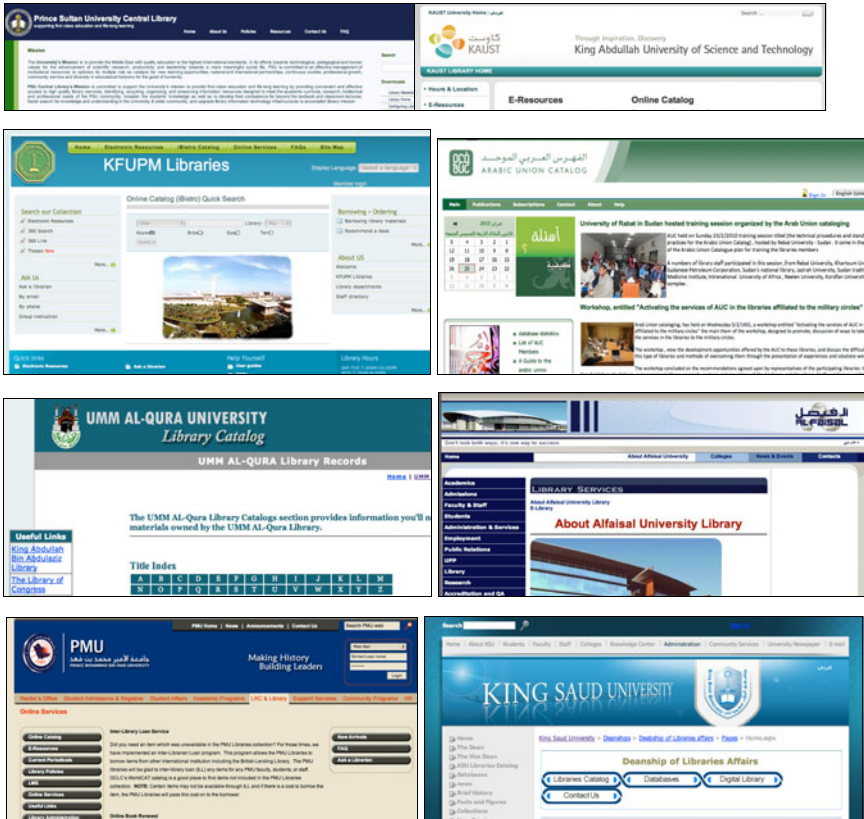


Fig.4. Typical colors in academic and library Saudi Websites

3.4 Microsoft Office Baseline

Most educated Saudis are familiar with the Microsoft Office suite through their introduction to MS Office products during secondary school education. If in doubt about whether an icon is appropriate or meaningful, user-interface designers can safely refer to the equivalent icon in an Office application as a basis for concept and appearance. All of the students had been trained to use MS Office products during secondary school. When asked if they would prefer local software, they said that they preferred to use translated Microsoft products. One conjecture is that Microsoft has come to represent the standard, the “best” product available; another is that students liked the opportunity to switch between the translated Arabic and English interfaces to improve their language skills. However, as Saudi educational standards improve and more graduates begin developing a local software industry, this recommendation may change.

Screenshots from some of Microsoft’s localized Middle Eastern applications are shown below.



Fig.5. Microsoft Excel and PowerPoint in Arabic versions

3.5 Icon Usage: General issues

As seen in the reference Websites, most buttons and tabs on Saudi and other Arabic-language Websites contain text only; there is very little use of icons. There does not appear to be any general cultural objection to icons. This trend may be a result of an artistic tradition in which calligraphy is a major art form and figurative painting less valued. Photographs, however, are widely used on nearly every Arabic-language Website and often identify buttons.

On the King Saud University Website, below, buttons usually have text only, but occasionally there are icons in addition to text. (Note that when Websites are available online in both Arabic and English, icon usage is almost always the same in both languages).



Fig.6. King Saud University. Typically buttons, menus, and tabs have text only

3.6 Icons with Specific Cultural or Linguistic Problems

As a general rule, icon design should avoid the use of Roman alphabet or numeric characters, as in the examples below.



There are some exceptions to this rule: where the Roman character is in wide use as an international symbol, it can be used without translation. Many standard icons use characters from the Roman alphabet, but are meaningful because of widespread Internet usage.



Icons which might be associated with other religions, such as a Christian cross, star of David, or a magic wand, should be avoided. Plus signs are acceptable as indicating that something new is being added. However, the vertical line of the plus should not be longer than the horizontal, to avoid any resemblance to a Christian cross. Both witchcraft and sorcery are outlawed in the Kingdom, and a psychic was arrested and sentenced to death as recently as November 2009 [11].



The thumbs-up icon is used by some young Saudis on social networking sites to indicate approval, but it could be misinterpreted by older Saudis. Hand gestures often do not translate well between cultures and should be avoided.

Similarly, icons showing people should be abstract, gender-neutral and well-clothed due to the importance of female modesty in Islamic culture. For example, icons should avoid the suggestion of short sleeves or uncovered hair for young women.

3.7 Visual Themes and Customization of Backgrounds

Respondents told us that they customized their mobile phones with photographs and preferred to put their own photos in backgrounds (appealing images included soccer heroes, beaches, pleasant views, and Angelina Jolie). However, note that the use of personal photographs in social media has been contentious. A recent court case in Saudi Arabia dealt with the possible damage to a young woman's reputation from photos placed on Facebook [9] Most of the images we saw on Saudi Websites were photographs of men in authority (like King Abdullah) or views of modern buildings that reinforce national pride.

3.8 Text Size on Buttons

Graphic designers should be aware that there is a 25% size expansion rate when English is translated into Arabic, if the type size remains the same.[11] Buttons should be sized accordingly to keep type easy to read. In the table below the Arabic text has been reduced in size so it takes less space than the English text, but the type is small and cramped. User testing may be required to ensure that the text is legible.

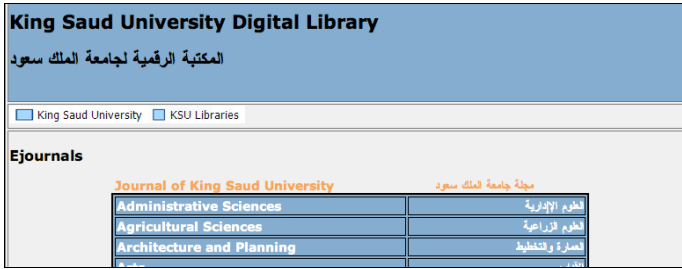


Fig.7. <http://digital.library.ksu.edu.sa>

3.9 Dual Language Pages

Some Arabic library sites have been designed so that the same page can accommodate English text on the left and Arabic text on the right. This has advantages for bilingual users who need to switch back and forth between languages when searching for materials in both languages.

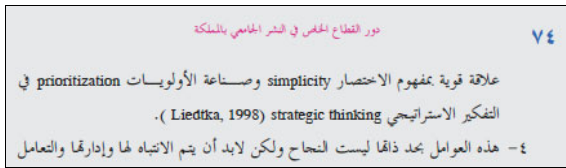


Fig.8. Using two languages on one page is common with Modern Arabic: note the use of Bidirectional Input (Right-to-Left English words and names embedded in Left-to-Right Arabic text). Users switch directions using standardized key combinations.

4 Conclusions

Translating its library software is an excellent first step for Client Y to localize its product for sale in Saudi Arabia. To keep localization expenditure to a minimum, the basic visual design and color palette of the current software could be used with only minor changes. However, it is important to realize that at least two levels of acceptance are involved. Users must feel comfortable with and enjoy the interface but, first, the country's conservative religious and social culture must approve the product for use in schools.

This application could be made more appealing to the Middle Eastern market by making the design resemble some of the more popular Saudi sites with a crisper, cleaner look. Incorporating more blues into the screen design would also bring it more closely in line with Saudi tastes. Further, icons with a more abstract, simplified look would better harmonize with the abstract geometric appearance of Arabic calligraphy.

However, to pass an initial review, library administrative user interfaces may need to accommodate Saudi concerns about access to information. All decisions on purchase and implementation of software for government schools are taken by the national Ministry of Education and many types of books remain restricted.

Nevertheless, this is a unique and exciting time for an American company to engage with the process of educational change. Saudi Arabia is dramatically raising the level of the whole educational system, equalizing opportunities for girls and boys and implementing modern educational technology. As the country builds and equips its new schools, it is negotiating its own path to modernity and its students are finding their own places in the wider world.

As the current (2005) Ten Year Plan notes:

The development and wide spread of unrestricted mass media communication and the reduction of its costs constitute a challenge and a threat to the Kingdom's national identity and culture. This issue requires a balanced approach that will allow students to enjoy the benefits of modern technology (which, in turn, will benefit the community) while maintaining the Kingdom's values and faith, and that is able to protect them from the risks that might harm them as individuals and groups and that might negatively affect Muslim society. [6]

And, as we support the efforts of young people themselves throughout North Africa and the Middle East to bring change, we should provide appropriately localized technology for education and social improvement.

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References

- [1] Smith, P.A.: Saudi Arabia's \$217 billion spending spree. *The Middle East* 400, 29–32 (2009)
- [2] Kamal, A.: Exemplary use of technology in K-12 education in Saudi Arabia: Dar Al-Fikr Private School. Proposal submitted to the Conference of the Association of Educational Communication and Technology (2009)
- [3] Ministry of Education, Saudi Arabia, Computer and Information Center (2010)
- [4] Ministry of Education, Saudi Arabia, Statistics for the year 1426H/1427H (2010)
- [5] Mills, A.: Reforms to women's education make slow progress in Saudi Arabia. *The Chronicle of Higher Education* 55(43), 11–15 (2009)
- [6] Ministry of Education, Saudi Arabia, Executive summary of the Ministry of Education Ten – Year Plan, 2nd edn., pp. 1425–1435 (2005)
- [7] Hofstede, G.: *Cultures and organizations: Software of the Mind*. McGraw Hill, New York (1997)
- [8] Al-Abdulkareem, S.: Summary of education development in Saudi Arabia: Historical project (2010)
- [9] Crossroads Arabia. Saudis grappling with social media (March 5, 2010)
- [10] OpenNet Initiative, Country Profile: Saudi Arabia – Internet filtering in Saudi Arabia (2009)
- [11] <http://www.kwintessential.co.uk/translation/articles/expansion-retraction.html>